

described a new genus (*Pseudomachaerium*) of Leguminosae (Dalbergieae) from Paraguay.—P. B. KENNEDY (*Muhlenbergia* 3:8. 1907) has described a new *Trifolium* from Montana.—T. D. A. COCKERELL (*idem* 9) has published a new genus (*Microbahia*) founded on *Syntrichopappus Lemmonii*.—A. A. HELLER (*idem* 10-12) has described new western species under *Cakile* and *Ribes*.—A. NELSON and P. B. KENNEDY (*Proc. Biol. Soc. Wash.* 19:35-40, 155-158. 1906) have described new species from Nevada under *Eriogonum* (2), *Arabis*, *Ribes*, *Gilia*, *Phlox*, *Castilleia*, *Hulsea*, *Raillardella*, *Chrysothamnus*, *Sophia*, *Sphaerostigma*, *Godetia*, *Oreocarya*, *Cryptanthe* (3).—J. M. C.

**Ecology and taxonomy of Caulerpa.**—SVEDELIUS<sup>34</sup> has published the results of his studies of the Ceylonese species of *Caulerpa*. In a discussion of their mode of life the following subjects are presented: (1) "do all *Caulerpas* grow under similar external conditions?"; (2) "different ecological types as distinguished by the varying development of their root-system," and (3) "of their assimilation system;" (4) "on the difference between morphological and adaptational characters in *Caulerpas*." Observations of the different kinds of variations result in the following enumeration: (1) those which depend on locality, and which are to be considered adaptations or "ecologisms;" (2) those which cannot be considered as ecologisms, but are the result of fluctuating variability among the different branchlets; (3) those which can be considered as phylogenetic stages of evolution; (4) bud variations of atavistic origin; (5) dwarf forms; (6) those which do not fall under any of these categories and may be bud variations without atavistic origin (=mutations).

In the taxonomic part of the paper twenty-one species are presented and illustrated, two of them being new.—J. M. C.

**Experiments on cell-formation.**—By subjecting root tips to various abnormal factors, such as  $MgSO_4$ ,  $NaCl$ , benzine vapor, and extreme temperatures, NĚMEC<sup>35</sup> finds that cell walls do not always appear between the daughter nuclei and that the daughter nuclei frequently fuse, the resulting nucleus of course having the double number of chromosomes. In the tips subjected to benzine vapor, the chromosomes are shorter and thicker than the normal ones, although in their formative stages no abnormalities can be observed. He was most successful with root tips of *Vicia Faba*, *Galtonia candicans*, *Hyacinthus*, and various euphorbias. Staminate branches of *Larix decidua* were placed in a warm chamber and subjected to the action of chloroform vapor. There was little doubt that some pollen mother cells passed directly over into pollen grains. Mixed among these pollen grains true tetrads were occasionally present. Sometimes the pollen mother cells divided once, giving rise to two pollen grains.—W. J. G. LAND.

<sup>34</sup> SVEDELIUS, NILS, Ecological and systematic studies of the Ceylon species of *Caulerpa*. Ceylon marine biological reports no. 4. pp. 81-144. *figs.* 51. 1906.

<sup>35</sup> NĚMEC, B., Ueber die Bedeutung der Chromosomenzahl. *Bull. Internat. Acad. Sci. Bohême* 10: pp. 4. 1906.